

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A method for generating a screen element of a wireless application based on a data object displayed on a user interface of a wireless device, the application including a data component
5 having at least one data field definition and a screen component having at least one screen element definition, the component definitions expressed in a structured definition language, the method comprising the steps of:

selecting the screen component corresponding to the screen element selected for display;

identifying at least one mapping present in the screen component, the mapping for

10 specifying a relationship between the screen component and the data component as defined by an identifier representing the mapping;

selecting the data component mapped by the mapping according to the mapping identifier;

15 obtaining a data object field value corresponding to the data field definition of the mapped data component;

generating a screen element from the screen element definition to include the data object field value according to the format of the data field definition as defined in the mapped data component.

20 2. The method according to claim 1, wherein a plurality of the data field definitions of the data component is shared between the screen component and the data component as represented by the mapping.

25 3. The method according to claim 2 further comprising the step of linking the plurality of data field definitions to corresponding ones of the screen element definitions of the screen component as represented by the identifier.

4. The method according to claim 2 further comprising the step of detecting a user event of the user interface related to the screen element.

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5. The method according to claim 4 further comprising the step of identifying the mapping in the screen component corresponding to the linked data component of the affected screen element.
- 5 6. The method according to claim 5 further comprising the step of updating the data object in a memory using the data field definition of the linked data component.
7. The method according to claim 5 further comprising the step of creating a new one of the data object in a memory using the data field definition of the linked data component.
- 10 8. The method according to claim 2, wherein the data object is passed to the user interface as a screen parameter.
9. The method according to claim 2, wherein a first screen element definition is mapped by
15 a first one of the identifiers to a first one of the data components and a second screen element definition is mapped by a second one of the identifiers to a second one of the data components different from the first data component.
10. The method according to claim 9, wherein the first screen element definition and the
20 second screen element definition are mapped to the same data component using the first identifier.
11. The method according to claim 2, wherein the structured definition language is XML based.
- 25 12. The method according to claim 2, wherein the identifier is a simple primary key.
13. The method according to claim 2, wherein the identifier is a composite key.

14. The method according to claim 2 further comprising the step of receiving an asynchronous communication message by the device via a network coupled to the device, the message including a message data object.
- 5 15. The method according to claim 2 further comprising the step of checking the message for the mapping corresponding to the data component of the application provisioned on the device.
16. The method according to claim 15 further comprising the step of updating the message data object corresponding to the message in a memory using the data field definition of the
10 linked data component and then reflecting that data change in the screen element linked to the data object.
17. The method according to claim 15 further comprising the step of creating the data object corresponding to the message in a memory using the data field definition of the linked data
15 component.
18. A system for generating a screen element of a wireless application based on a data object displayed on a user interface of a wireless device, the application including a data component having at least one data field definition and a screen component having at least one screen
20 element definition, the component definitions expressed in a structured definition language, the method comprising the steps of:
- a mapping manager for selecting the screen component corresponding to the screen element and identifying at least one mapping present in the screen component, the mapping for specifying a relationship between the screen component and the data component as defined by an
25 identifier representing the mapping, the mapping manager for selecting the data component mapped by the mapping according to the mapping identifier;
- a data manager for obtaining a data object field value corresponding to the data field definition of the mapped data component; and
- a screen manager for generating a screen element from the screen element definition to
30 include the data object field value according to the format of the data field definition as defined in the mapped data component.

19. The system according to claim 18, wherein a plurality of the data field definitions of the data component is shared between the screen component and the data component as represented by the mapping.

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20. The system according to claim 19, wherein the plurality of data field definitions are linked to corresponding ones of the screen element definitions of the screen component as represented by the identifier.

10 21. The system according to claim 19 further comprising the presentation manager configured for detecting a user event of the user interface related to the screen element.

22. The system according to claim 21 further comprising the mapping manager configured for identifying the mapping in the screen component corresponding to the linked data
15 component of the affected screen element.

23. The system according to claim 22 further comprising the data manager configured for updating the data object in a memory using the data field definition of the linked data
20 component.

24. The system according to claim 22 further comprising the data manager configured for creating a new one of the data object in a memory using the data field definition of the linked data component.

25 25. The system according to claim 19, wherein the data object is passed to the user interface as a screen parameter.

26. The system according to claim 19, wherein a first screen element definition is mapped by a first one of the identifiers to a first one of the data components and a second screen element
30 definition is mapped by a second one of the identifiers to a second one of the data components different from the first data component.

27. The system according to claim 26, wherein the first screen element definition and the second screen element definition are mapped to the same data component using the first identifier.

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28. The system according to claim 19, wherein the structured definition language is XML based.

29. The system according to claim 19, wherein the identifier is a simple primary key.

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30. The system according to claim 19, wherein the identifier is a composite key.

31. The system according to claim 19 further comprising a communication manager for receiving an asynchronous communication message by the device via a network coupled to the device, the message including a message data object.

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32. The system according to claim 19 further comprising the mapping manager configured for checking the message for the mapping corresponding to the data component of the application provisioned on the device.

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33. The system according to claim 32 further comprising the data manager configured for updating the message data object in a memory using the data field definition of the linked data component.

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34. The system according to claim 32 further comprising the data manager configured for creating the message data object in a memory using the data field definition of the linked data component.

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35. A method for generating a data object of a wireless application based on a change in a screen element displayed on a user interface of a wireless device, the application including a data component having at least one data field definition and a screen component having at least one

screen element definition, the component definitions expressed in a structured definition language, the method comprising the steps of:

- selecting the screen component corresponding to the screen element;
- identifying at least one mapping present in the screen component, the mapping for
- 5 specifying a relationship between the screen component and the data component;
- selecting the data component mapped by the mapping;
- obtaining a changed value from the screen element corresponding to the mapped data component;
- assigning the changed value to a data field value of the data object according to the
- 10 format of the data field definition as defined in the mapped data component.

36. A device for generating a screen element of a wireless application based on a data object displayed on a user interface of a wireless device, the application including a data component having at least one data field definition and a screen component having at least one screen

15 element definition, the component definitions expressed in a structured definition language, the method comprising the steps of:

- means for selecting the screen component corresponding to the screen element selected for display;
- means for identifying at least one mapping present in the screen component, the mapping
- 20 for specifying a relationship between the screen component and the data component;
- means for selecting the data component mapped by the mapping;
- means for obtaining a data object field value corresponding to the data field definition of the mapped data component;
- means for generating a screen element from the screen element definition to include the
- 25 data object field value according to the format of the data field definition as defined in the mapped data component.

37. A computer program product for generating a screen element of a wireless application based on a data object displayed on a user interface of a wireless device, the application

30 including a data component having at least one data field definition and a screen component

having at least one screen element definition, the component definitions expressed in a structured definition language, the computer program product comprising:

a computer readable medium;

a mapping module stored on the computer readable medium for selecting the screen

5 component corresponding to the screen element and identifying at least one mapping present in the screen component, the mapping for specifying a relationship between the screen component and the data component as defined by an identifier representing the mapping, the mapping module for selecting the data component mapped by the mapping according to the mapping identifier;

10 a data module stored on the computer readable medium for obtaining a data object field value corresponding to the data field definition of the mapped data component; and

a screen module stored on the computer readable medium for generating a screen element from the screen element definition to include the data object field value according to the format of the data field definition as defined in the mapped data component.

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